

Euphonix R-1

Important Operational and Data Management Considerations

Version 3.0
Part # 840-07694-02-c

Welcome to R-1!

Thank you for purchasing the Euphonix R-1 MultiTrack Hard Disk Recorder. The R-1 has been designed as the successor to large format tape machines in professional recording facilities. Both forward looking yet solidly grounded in audio tradition, the R-1 provides the highest standards of performance that the latest technology can offer, and yet can be controlled by an interface that is familiar to anyone who has operated a multi Track tape machine from a remote.

Although great care has been taken to make the R-1's operation clear, logical, and familiar to the experienced multi Track operator, the fact that the R-1 records and stores audio to hard drives rather than tape will in certain instances mean re-evaluating the way in which the Recorder's media will be handled. The observation of some simple guidelines will insure that your precious creative work is recorded and stored safely and that you enjoy all the benefits that your new R-1 was designed to deliver.

R-1 Hard Drive Management

DO NOT ADD OR REMOVE AUDIO DRIVE(S) TO OR FROM THE AUDIO DECK WHILE THE TRANSPORT IS RUNNING.

Just as you would not try to remove the tape reel on an analog recorder while it playing or recording, you should not remove actively engaged media on the R-1 either. Damage may occur. While the R-1 will attempt to function without its drives while prompting you to take corrective action, there is no guarantee that the system will recover gracefully from such an action on the part of the operator. If you are recording at such time that the drives become unavailable to the system, you will lose the current recording pass at the very least.

USE THE LOAD AND UNLOAD MEDIA COMMANDS (DIRECTORY PANEL) TO ADD OR REMOVE MEDIA FROM THE SYSTEM.

The R-1 Pilot Application, when first booted (started), initializes the Audio Deck which then 'loads' the drive information from its attached drives. This process is only repeated under specific circumstances.

- 1) The Audio Deck is remotely reset by the R-1 Pilot
- 2) The Load command is execute by the operator

Adding a new drive to the system while failing to use the Load command will likely result in the Audio Deck saving disk information from the drive it has loaded to a new drive which has never been loaded. This will effectively overwrite the data on the new drive making it unusable. IF DRIVES ARE ADDED OR REMOVED WITHOUT UNLOADING THEN LOADING THE RESPECTIVE DRIVES, YOU WILL PROBABLY LOSE ACCESS TO THE AUDIO ON EITHER THE NEW OR REMOVED DRIVES OR BOTH. Although the R-1 Application software will try to correct for such mistakes; there is no way to guarantee that the R-1 will keep up with arbitrary changes. You must operate the machine correctly with respect to media loading and unloading.

Do not remove drives from the audio deck until the drive ID indicator lights have stopped blinking.

Just as one would not attempt to remove a reel of tape while it was still spinning, neither should you remove a drive from the Audio Deck while the drive is still spinning. You may not be able to see or hear it, but after unlocking the Kingston drive tray(s) the drives are continuing to spin down until the SCSI ID indicator lights stop blinking. Removing a Hard Drive from the R-1 first requires closing the R-1 Pilot Application. Next, the keylock on the Kingston drive carrier should be turned to the "open" or "unlocked" position. The keylock also removes power from the hard disk so it can safely spin to a stop. Since you cannot see the drive spin down, a feature of the Kingston removable drive system is that during the spin down period, the SCSI drive ID indicator will blink. This indicator works in the reverse situation as well, during power up of a drive. It is also necessary to wait for the drives to spin up and the indicator to stop blinking prior to starting the R-1 Pilot Application.

There must ALWAYS be a drive installed at SCSI ID #1 in the Audio Deck.

Just as you would not expect a tape machine to do anything without a tape loaded, the Audio Deck needs a disk drive. The distinction being that since the Audio Deck can work with more than one disk drive, it is expected that always one of those drives will be found at SCSI ID #1.

Always keep the same drive in SCSI ID #1 for all of your sessions on a given Title.

Drive Bay #1 of the Audio Deck (SCSI ID #1, on left side of front panel) holds the default disk drive for the transportation of the Title file. The Title file is the non-audio configuration and scheduling information for a given recording project. For this reason, it is important to keep the same disk in Drive Bay #1 for the duration of all sessions working on that Title. Swapping the two drives can cause different versions of the same Title to be copied to each of the drives.

Carefully mark the drive carriers with information that will allow you to place the drives in the exact same position when you next install them in an Audio Deck.

It is strongly recommended that only a few short Titles or even only one large Title be recorded any the set of real-time audio drives at a time.

Either replace the SCSI real-time audio drives with fresh blank drives after you have a few Titles recorded or back-up the SCSI real-time audio drives to tape, then clean the recorded material off before starting yet another Title. Keeping the drives lightly populated with recordings makes back-up faster and is less confusing. This working method also helps to keeps the number of Titles per back-up tape to a minimum creating a more direct correspondence between storage tapes and Titles.

The R-1 supports one or two 9 gigabyte drives for real time recording and playback plus a single Exabyte Mammoth tape drive for backup.

Additional SCSI devices cannot be connected to the R-1. Also in this version there is limited support for the back-up of 18 GB or larger drives. As the Mammoth drive only can back up 20 GB of data to a single tape, features that allow complete back-up of any deck across both of its drives will only work with 9 GB drives. The two drive bays in the Audio Deck will bear SCSI IDs '1' and '2'. The Exabyte Mammoth can be purchased as an external device and connected to the Audio Deck's external SCSI connector. The Exabyte tape drive should ALWAYS be set to SCSI ID '0'.

Hard Drive Care

Drives should be handled at least as carefully as the tapes they replace.

SCSI disk drives are precision devices that contain internal moving parts that are subject to damage if the drive is not handled carefully. They are sensitive to sudden effects of gravity. Drives should not be dropped, thrown, banged around, or otherwise exposed to sudden physical shock or vibration.

Hard Drives are sensitive to drastic temperature changes.

Because drives are made of materials that expand and contract with changes in temperature, transitioning drives between hot and cold temperatures should be done gradually. If stored or transported in a cold environment, drives should be allowed to come to room temperature gradually before installation into the Audio Deck. The drive metals shrink and contract with temperature and this may cause a cold drive to recalibrate itself frequently if put into service cold. This could affect recording and/or playback performance. Also, it is possible that condensation could develop inside a drive if warmed quickly and this condensation can also adversely affect drive performance.

Drives should not be exposed to direct sunlight or stored near any source of heat.

Drives need to be protected from static electrical discharge.

Even though the drives are in the Kingston carriers and this will to some extent isolate the drive from static electrical discharge while being handled, Euphonix strongly advises that you should ground yourself before handling the Kingston carriers. It is also a good practice simply not to touch the actual drive chassis, and to handle the drive by its carrier.

Given proper care, drives will deliver many times the recording hours of comparable capacity tape since the recording surface is not degraded by recording or playback.

Operation Tips

The Title must be saved after audio is recorded or edits are made. AutoSaving is recommended.

If a Title is closed without being saved, all the audio that was recorded since the last Title save will be lost or at least made difficult to recover. Any edits that were made since the last Title save will be lost and will require recreation. The Title contains the information that correctly places the sounds in relation to time and tracks. While the R-1 saves its new recordings immediately upon receiving the Stop command during recording operations, it does not automatically save the current Title unless the AutoSave option is turned on. AutoSaving is recommended.

- Right click on the Display button at the extreme left of the Navigation Bar across the top of the R-1 application software. This will show you alternative displays.
- Choose Preferences.
- In the Preferences panel you will find a check box to enable AutoSave. Check this box "on."
- Next to the enable checkbox you will find an edit box for setting the duration between AutoSave operations. This can be as frequent as once every 1 minute.

If your Title is very large and complex (e.g. a couple thousand clips), it may not be advisable to AutoSave every 1 minute as the save operation itself may take some time and cause the R-1 to be less than ideally responsive. Conversely, setting the AutoSave operations too far apart will risk more loss of data should something fail. 5-to-8 minutes is probably typical.

Titles should be given a unique name at the time you create them

Audio recorded to a Title is stored in a Library that is automatically named with the name of the Title. If Titles are named as they are created, you can be sure that all the audio recorded to the Title will be stored in a Library of the same name. This will greatly ease the task of managing your audio files.

Destructive Recording is absolutely destructive.

There is no Undo. Destructive Record works exactly like tape. Editing does not work in Destructive Record mode, since in this mode the Title time has a direct bearing on what material will be replaced when new material is punched-in. It is possible to change to the Edit Record mode to then make edits, but once you have changed to Edit mode you can no longer go back to Destructive mode for that Title. If a new Destructive Record mode Title is created with a Duplicate or Save Copy command, the new Title will reference the same audio as the Title from which it was created. This means that audio recorded to the new Title will OVERWRITE audio that was recorded to the original Destructive Record mode Title UNLESS you switch to Edit Record mode as previously described. You can add Sheets to a Destructive Title and record on them without affecting the audio on other Sheets in the Title.

Destructive Recording is linear.

When you are recording in Destructive Record mode, the disk drives are treated much like linear tape. And like tape there is a prescribed length for recording. This length of recording for a Title in Destructive mode is set using the Title Start and Title End times.

When you go into Destructive record for the first time in a Title from the Remote or GUI, you will have to go through the setting of the Title Start time and End time. They will default to the existing Title Start time and 6 minutes after that Title Start time. A minimum of 10 seconds is required. You will only be able to enter this once for a Title. A message box will appear warning you of this if changed from the GUI.

Any changes to the Title Start and End time while in Destructive mode will be ignored. If you switch back to Edit mode, the Title start and end will be editable again, from the GUI or Remote. You will not be able to return a Title to Destructive mode after it has been switched to Edit mode.

The GUI record mode dialog shows the Title Start and End times and the Destructive record length. The latter will not change after Destructive mode has been entered. It will not follow changes to the Title Start and End in Edit mode.

Two drives are necessary for seamless punch in/out monitoring of 24 Tracks.

When recording to a single drive, only 2 Tracks can be punched over 24 with instantaneous monitor switching. Punching over more than 2 Tracks (while playing all 24) may cause delays in the monitoring transition from Input to Repro. The R-1 has been designed to overcome this punch monitoring delay in a two-drive configuration. One-drive configurations are fine for editing and mono or stereo overdubs.

Edit mode recording "edits" your track as new recordings are made. Audio that is completely replaced (overwritten) by subsequent punch operations cannot be edited, and instead must be placed again from the Directory. Use Undo in Edit mode to instantly recover overwritten track information.

Punching in on the same Track, over top of existing audio, will alter the Track to play only the most recent punch for that region of time. In Edit Record mode, the audio still exists on disk (and can be Auditioned from the Audio Browser of the Directory panel). Use the Undo operation immediately after recording to discard the new punch and re-expose the previous punch (or Redo to then get back to the new punch). Up to 9 un-doable actions can be remembered by the R-1.

Audio that was recorded to a Track but then removed with the Undo function can be recovered with Redo if within the last 9 undoable actions remembered by the system.

Audio that was removed from a Track with an edit command, e.g. **Cut**, can be recovered with Undo if within the last 9 undoable actions remembered by the system.

Audio no longer present on any track, can still be placed on a track by using the Copy command in the Audio Browser, then Paste in the Multitrack.

At power up of the R-1 system rack units, monitor the front panel LEDs to be sure that the desired Sample Rate Source and Sample Rates have been automatically sensed.

Get oriented on the machine before making commercial commitments

In a short time, these new procedures will have become second nature for you. As with any sophisticated piece of equipment, and particularly where the technology and certain operating principles are new, we strongly recommend that you put the R-1 to test in a non-critical setting for a few weeks. If desired you can also run a second more familiar machine in tandem with the R-1 during the orientation period or until you have become absolutely confident in your working methods with the R-1. Although every effort has been made to emulate working procedures for existing machines, certain advantages of the disk-based non-linear R-1 require slightly different data and media management. Common sense and the simple principle of getting familiar with the instruments of your craft will undoubtedly lead to the full realization of the R-1's enhanced production capabilities. Have fun.